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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/653,175	09/03/2003	Richard Simons	301FO001	3028

7590 03/29/2005

Karl D. Kovach, Esq.
Stratos Lightwave, Inc.
7444 West Wilson Avenue
Chicago, IL 60706

EXAMINER

KIANNI, KAVEH C

ART UNIT PAPER NUMBER

2883

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/653,175

Applicant(s)

SIMONS ET AL.

Examiner

Kianni C. Kaveh

Art Unit

2833

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-20 is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☒ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

- Upon further consideration of the restriction requirement, submitted on 2/14/05, as well as applicant's arguments the restriction requirement herein is lifted and therefore it is moot.

Reason for allowing claims 16-20

Claims 16-20 are allowed because the prior art of record, taken alone or in combination, fails to disclose or render obvious 'a shroud mounted to the daughter card, the shroud having an optical fiber and a lens' in combination with the rest of the limitations of the base claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jurbergs et al. (US 6516111).

Regarding claim 1, 5, 8 and 9 and 15 Jurbergs teaches a device (shown in at least fig. 1) comprising: a back plane 14 having an optical fiber 14, the optical fiber of the back plane having a terminal end, the terminal end of the optical fiber of the back plane having a terminal surface 43 oriented at an angle relative to a longitudinal length direction of the optical fiber 40 of the back plane 14; and a shroud 16 having an optical fiber 22, the optical fiber 22 of the shroud having a terminal end, and wherein the terminal end of the optical fiber of the shroud is in optical communication with the terminal end of the optical fiber of the back plane 14, when a second light signal is transmitted from the optical fiber of the back plane 14 to the optical fiber 22 of the shroud 16, the second light signal travels through the optical fiber 14 of the back plane toward the terminal end of the of the optical fiber 20 of the back plane 14, the second light signal is then, due to total internal reflection, reflected off of the terminal surface 43 of the optical fiber 20 of the back plane 14 and then exits the surface of the optical fiber of the back plane adjacent to the terminal end of the optical fiber of the back plane 14/18, the second light signal then enters the optical fiber 22 of the shroud 16 through the terminal end of the optical fiber 22 of the shroud 16.

However, in above embodiment Jurbergs does not specifically teach wherein wherein, when a first light signal is transmitted from the optical fiber of the shroud to the optical fiber of the back plane, the first light signal exits the terminal end of the

optical fiber of the shroud and impinges a surface of the optical fiber of the back plane adjacent to the terminal end of the optical fiber of the back plane, the first light signal then enters the optical fiber of the back plane and, due to total internal reflection, is reflected off of the terminal surface of the optical fiber of the back plane so that the first light signal travels along the longitudinal length direction of the optical fiber of the back plane away from the terminal end of the optical fiber of the back plane. This limitation more specifically taught in another embodiment shown in figure 5; wherein, when a first light signal is transmitted from the optical fiber of the shroud 16 to the optical fiber 204 of the back plane 14, the first light signal exits the terminal end of the optical fiber of the shroud 16 and impinges a surface of the optical fiber of the back plane adjacent to the terminal end of the optical fiber of the back plane 14, the first light signal then enters the optical fiber 204 of the back plane 14 and, due to total internal reflection, is reflected off of the terminal surface 43 of the optical fiber 204 of the back plane 14 so that the first light signal travels along the longitudinal length direction of the optical fiber 204 of the back plane 14 away from the terminal end of the optical fiber of the back plane 14. Thus, it would have been obvious to a person of ordinary skill in the art when the invention was made to combine different embodiments of Jurburghs, specifically having transmitting and/or receiving light from both terminals of fibers 22 and 20 since they have these capabilities and since such transmission/receiving of optical signals would provide a cascaded integrated fiber array optical switch in bidirectional optical communications (see at least col. 1, 2nd parag.). Yoshimura also does not specifically teach wherein a lens positioned between the terminal end of the

optical fiber of the shroud and the terminal end of the optical fiber of the optical board, where optical communication takes place and that wherein the terminal surface of the optical fiber of the back plane is metallized. It would have been obvious/well-known to those of ordinary skill in the art when the invention was made to use lens(s) as means of conventionally focusing light between the above optical elements and that metal coat the surface of the fiber end, since such modifications are conventional and provide a cascaded integrated fiber array optical switch in bidirectional optical communications (see at least col. 1, 2nd parag.).

- The statements advanced in claims 1 and 9, above, as to the applicability and disclosure of Jurbergs et al. are incorporated herein as follows.

Regarding claims 2-4, 6-7 and 10-14, Jurbergs further teaches wherein a longitudinal length direction of the optical fiber of the shroud 16 is substantially perpendicular to the longitudinal length direction of the optical fiber of the back plane 14 (shown in fig. 1) wherein the shroud contacts the back plane (shown in fig. 1); wherein the back plane includes a first alignment pin aperture and a second alignment pin aperture (see col. 6, 5th parag.); wherein the shroud includes a first alignment pin and a second alignment pin, and wherein the first alignment pin aperture of the back plane has a shape complementary to a shape of the first alignment pin of the shroud, and wherein the second alignment pin aperture of the back plane has a shape complementary to a shape of the second alignment pin of the shroud (see at least fig. 1 and col. 6, 5th parag.).

Claim 1-5 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshimura et al. (US 5999670).

Regarding claims 1, 5 and 9, Yoshimura teaches a device (shown in at least fig. 21) comprising: a optical board having an optical fiber (see at least fig. 14, item 'optical board' comprising a substrate with an optical waveguide/fiber), the optical fiber of the optical board having a terminal end, the terminal end of the optical fiber of the optical board having a terminal surface oriented at an angle relative to a longitudinal length direction of the optical fiber of the optical board (see fiber/waveguide surface having an angle with respect to longitudinal length direction of the optical fiber of the optical board); and

a shroud having an optical fiber (see item 43 or 49 depicted in figures 19 or 20, respectively as transmitter/receiver of light to/from 'optical board' shown in figure 14/15), the optical fiber of the shroud having a terminal end (shown in fig. 19/20, item end fiber as transmitter/receiver), and wherein the terminal end of the optical fiber of the shroud is in optical communication with the terminal end of the optical fiber of the optical board (shown in fig. 14/15, items 43/49 and angled fiber), and wherein,

when a first light signal is transmitted from the optical fiber of the shroud to the optical fiber of the optical board, the first light signal exits the terminal end of the optical fiber of the shroud and impinges a surface of the optical fiber of the optical board adjacent to the terminal end of the optical fiber of the optical board, the first light signal then enters the optical fiber of the optical board and, due to total internal reflection, is reflected off

of the terminal surface of the optical fiber of the optical board so that the first light signal travels along the longitudinal length direction of the optical fiber of the optical board away from the terminal end of the optical fiber of the optical board (shown in fig. 14, item shroud 43 transmits light to the fiber of the backplane as a result of the TIR, and see col. 18, last parag.), and wherein,

when a second light signal is transmitted from the optical fiber of the optical board to the optical fiber of the shroud, the second light signal travels through the optical fiber of the optical board toward the terminal end of the of the optical fiber of the optical board, the second light signal is then, due to total internal reflection, reflected off of the terminal surface of the optical fiber of the optical board and then exits the surface of the optical fiber of the optical board adjacent to the terminal end of the optical fiber of the optical board (shown in fig. 15, item light reflected, TIR, off surface 6 of the backplane) , the second light signal then enters the optical fiber of the shroud through the terminal end of the optical fiber of the shroud (shown in fig. 15 and 20, wherein item light reflected off the optical fiber of backplane enters the optical fiber of shroud 49, in which the shroud with optical fiber is shown in fig. 20, as light receiver, and see col. 18, last parag.).

However, Yoshimura does not explicitly teach wherein the above optical board is a back plane and that a lens positioned between the terminal end of the optical fiber of the shroud and the terminal end of the optical fiber of the optical board, where optical communication takes place. Nevertheless, Yoshimura states that the optical bard/device has a transparent substrate with optical fiber(s) that is used as means for

optical interconnection and optical communications (see col. 3, 6th –7th parag. and col. 14, 6th parag.). Thus, it would have been obvious/well-known to those of ordinary skill in the art when the invention was made to use the optical board of Yoshimura as a 'back plane', and use a lens as means of conventionally focusing light between the above optical elements since such backplane provides reflection mechanism for optical communication and measurements (see col. 1, 1st parafig.).

- The statements advanced in claims 1 and 9, above, as to the applicability and disclosure of Yoshimura et al. are incorporated herein as follows.

Regarding claims 2-4 and 10-12, Yoshimura further teaches wherein the angle is substantially forty-five degrees (see col. 12, lines 33-38); wherein a longitudinal length direction of the optical fiber of the shroud is substantially perpendicular to the longitudinal length direction of the optical fiber of the optical board (shown in fig. 14/15 item shroud 43/49); wherein the shroud contacts the optical board (shown in fig. 14/15 item shroud 43/49);

Citation of Relevant Prior Art

Prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In accordance with MPEP 707.05 the following references are pertinent in rejection of this application since they provide substantially the same information disclosure as this patent does. These references are:

Luo 2003/00110905 teaches having/inserting lens between optical elements as means of focusing light

Colgan et al. 20040114859

Hso 6647170

Chen et al. 6510260

Shen et al. 20040218848

Uken et al. 5193132

These references are cited herein to show the relevance of the apparatus/methods taught within these references as prior art.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Cyrus Kianni whose telephone number is (571) 272-2417.

The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 6:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font, can be reached at (571) 272-2415.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9306 (for formal communications intended for entry)

or:

Application/Control Number: 10/653,175
Art Unit: 2833

Page 10

Hand delivered responses should be brought to Crystal Plaza 4, 2021 South Clark Place,
Arlington, VA., Fourth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to
the Group Receptionist whose telephone number is (703) 308-0956.

A handwritten signature in black ink, consisting of a stylized 'K' followed by a long, sweeping horizontal line that ends in a small upward flick.

K. Cyrus Kianni
Patent Examiner
Group Art Unit 2883

March 22, 2005